

Freshwater Beach Inspection Program

2017 Summer Sampling

Annual Report



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2017 Public Bathing Beach Inspection Program: Freshwater Beaches

The freshwater beach program of the NHDES Public Beach Inspection Program inspects each participating beach three times between Memorial Day and Labor Day. In 2017, freshwater beaches were inspected from June 5 to August 25 from over 170 freshwater (town, state, federal and private association beaches), plus nearly 30 NH beaches were sampled by other agencies and municipalities and reported to NHDES. During 2017, 593 beach inspections were conducted by NHDES and 162 were inspected by others for a total of 755 beach inspections of freshwater beaches. A total of 1,762 *E. coli* samples (plus 179 field duplicates) were collected and reported by the Beach Program. In addition to monthly sampling, two beaches (Weirs Beach, Laconia and Pawtuckaway State Park Beach, Nottingham) were sampled 4 times per week to be analyzed for a beach modeling project in collaboration with the Department of Public Health and Tracking, DHHS. Samples were analyzed by the DHHS public health laboratory and outside labs also reported to NHDES. A total of 224 *E. coli* samples exceeded the state water quality criteria, resulting in the issuance of 82 advisories on 49 freshwater beaches for a total of 398 beach days combined. To see result details for each beach in 2017, there are 199 short reports available on the NHDES OneStop database <http://www4.des.state.nh.us/DESONestop/BasicSearch.aspx> (Figure 1).

The Beach Program also implements visual surveillance for cyanobacteria blooms during each beach inspection. Since 2003, NHDES has issued cyanobacteria specific beach advisories if a bloom occurs at a beach or lake-wide warning if a bloom occurs on a lake without a public beach or away from a public beach (Figure 2). With close to 170 beaches monitored each month, nearly 500 total routine beach observations for cyanobacteria were conducted in the 2017 swim season. During routine inspections, only 1% (5) of these beaches had visible cyanobacteria occurring. There were an additional 175 samples observed by NHDES for cyanobacteria due to public complaints. Over 70% of samples were confirmed to contain cyanobacteria. In 2017, there were 19 cyanobacteria advisories and lake warnings or about 15 % of samples requiring action (advisories or warnings for exceeding the 70,000 cells/ml threshold) between May 30 and October 6, 2017. The earliest reported bloom was May 31, 2017 and the latest reported bloom was November 27, 2017. The average length of an advisory was 16 days, with 5 days as the shortest and 72 days as the longest. *Anabaena circinalis* (*Dolichospermum*) was the most common type of cyanobacteria observed by NHDES. Silver Lake, Hollis had a bloom almost the entire swim season. Silver Lake and Long Pond, Pelham had two separate cyanobacteria-related lake warning or advisory events. Periodic blooms were also reported from three public water systems. Response protocols for surface drinking water supplies were utilized in conjunction with the NHDES Drinking Water and Groundwater Bureau to ensure surface water supplies remained safe for public usage. There is an increasing need for program development and monitoring capacity for this emerging contaminant. Cyanobacteria and harmful algal bloom monitoring efforts continue to develop with the NHDES Public Beach Inspection Program.

In preparation for the 2018 sampling season, NHDES Beach Program staff will continue to improve the tools implemented for the 2017 season:

1. Refinements of the beach advisory map searchable by advisory status:
http://www4.des.state.nh.us/WaterShed_BeachMaps/WaterShed_BeachMaps.aspx
2. Annual reports for each freshwater beach found through the OneStop data search:
<http://www4.des.state.nh.us/DESOnestop/BasicSearch.aspx>
3. Press releases for cyanobacteria blooms exceeding state criteria of 70,000 cells/ml:
<https://www.des.nh.gov/media/pr/2017/index.htm>
4. Enhance the information available on cyanobacteria through NHDES:
https://www.des.nh.gov/organization/divisions/water/wmb/beaches/faq_cyanobacteria.htm
5. Response protocols with the Drinking Water & Groundwater Bureau:
<https://www.des.nh.gov/organization/divisions/water/dwgb/cyano-response.htm>

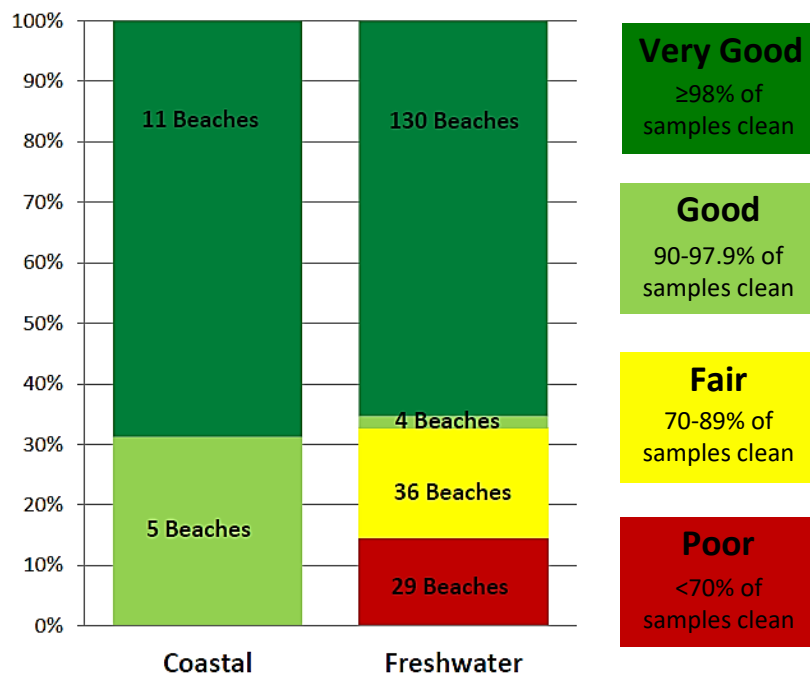


Figure 1. The number of clean samples was compared to the total number of samples tested for each beach (2003-current). During the summer, freshwater beaches are typically sampled once a month and most of the coastal beaches are sampled twice a week. All coastal beaches and most freshwater beaches in the New Hampshire assessment fall into the “Good” or “Very Good” categories, where beaches are clean > 90% of the time.

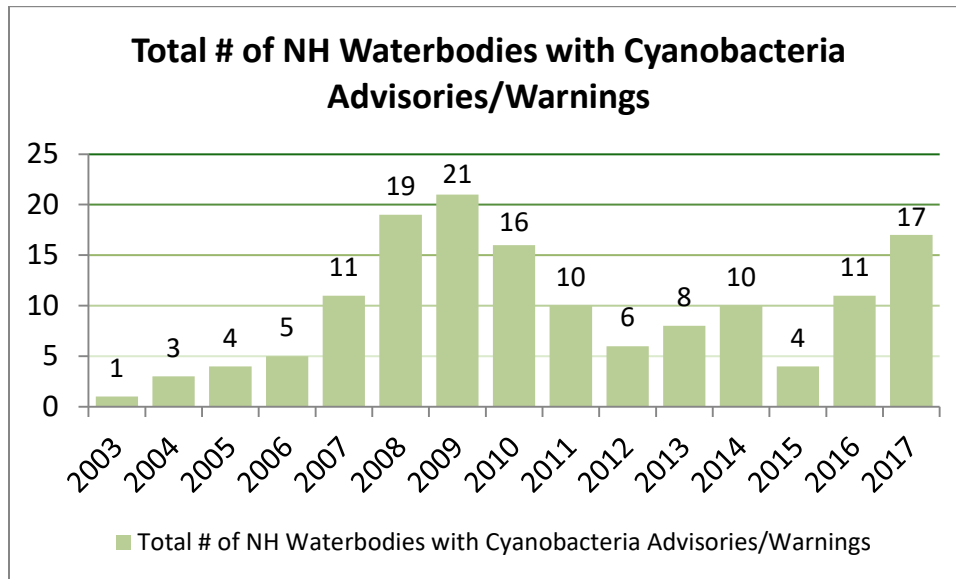


Figure 2. There were 19 cyanobacteria beach advisories and lake warnings from 17 different waterbodies recorded by NHDES in 2017.